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PATENT
Dkt. STL10005

In re application of:	**Christopher L. Hill and Garry E. Korbel**		
Assignee:	**Seagate Technology LLC**		
Application No.:	**09/995,206**	Group No.:	**2837**
Filed:	**November 27, 2001**	Examiner:	**Erick Glass**

For: **POWER SUPPLY OUTPUT CONTROL APPARATUS AND METHOD**

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia 22313-1450

ATTENTION: Board of Patent Appeals and Interferences

Sir:

SECOND APPELLANT'S BRIEF

A first APPELLANT'S BRIEF was filed September 27, 2007. A new non-final Office Action was mailed on April 4, 2008 in response to this first brief. The new non-final Office Action reopened prosecution in order to subject the claims to a new grounds of rejection.

The Applicant has accordingly filed this second APPELLANT'S BRIEF, and an associated NOTICE OF APPEAL herewith. The required fees, any required petition for extension of time for filing this Brief, and the authority and time limits established by the Notice of Appeal are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains these items under the following headings, and in the order set forth below:

I. REAL PARTY IN INTEREST
II. RELATED APPEALS AND INTERFERENCES
III. STATUS OF CLAIMS
IV. STATUS OF AMENDMENTS
V. SUMMARY OF CLAIMED SUBJECT MATTER
VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL
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IX. EVIDENCE APPENDIX
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I. REAL PARTY IN INTEREST

The real party in interest in this Appeal is Seagate Technology LLC.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this Appeal.

III. STATUS OF CLAIMS

The status of the claims in this application is:

Claim	Status
1. (Canceled)	
2. (Canceled)	
3. (Canceled)	
4. (Canceled)	
5. (Canceled)	
6. (Canceled)	
7. (Canceled)	
8. (Canceled)	
9. (Canceled)	
10. (Canceled)	
11. (Canceled)	
12. (Canceled)	
13. (Canceled)	

14. (Canceled)	
15. (Canceled)	
16. (Canceled)	
17. (Canceled)	
18. (Canceled)	
19. (Canceled)	
20. (Canceled)	
21. (Canceled)	
22. (Canceled)	
23. (Canceled)	
24. (Canceled)	
25. (Canceled)	
26. (Canceled)	
27. (Canceled)	
28. (Canceled)	
29. (Canceled)	
30. (Canceled)	
31. (Canceled)	
32. (Canceled)	
33. (Canceled)	
34. (Previously presented)	Independent.
35. (Previously presented)	Depends from claim 34.
36. (Previously presented)	Depends from claim 34.
37. (Previously presented)	Depends from claim 34.
38. (Previously presented)	Depends from claim 34.
39. (Previously presented)	Depends from claim 34.
40. (Previously presented)	Depends from claim 34.
41. (Previously presented)	Independent.
42. (Previously presented)	Depends from claim 41.
43. (Previously presented)	Depends from claim 41.
44. (Previously presented)	Depends from claim 43.
45. (Previously presented)	Depends from claim 41.
46. (Previously presented)	Depends from claim 45.
47. (Previously presented)	Independent.
48. (Previously presented)	Depends from claim 47.
49. (Canceled)	
50. (Canceled)	
51. (Previously presented)	Depends from claim 47.
52. (Previously presented)	Depends from claim 47.
53. (Previously presented)	Depends from claim 52.
54. (Previously presented)	Depends from claim 35.
55. (Previously presented)	Depends from claim 41.
56. (Previously presented)	Depends from claim 47.

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application: 34-48 and 51-56.

B. STATUS OF ALL THE CLAIMS

1. Claims canceled: 1-33 and 49-50.
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 34-48 and 51-56.
4. Claims allowed: None.
5. Claims rejected: 34-48 and 51-56.
6. Claims objected to: None

C. CLAIMS ON APPEAL

Claims now on appeal: 34-48 and 51-56.

IV. STATUS OF AMENDMENTS

No post-final amendments have been submitted.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The embodiments of the present invention as recited by the language of independent claims 34, 41, and 47 are generally directed to a method and apparatus for power supply output control.

Independent claim 34 generally features an apparatus (such as exemplary disk drive 100, 200 in FIGS. 1-2; specification, page 4, lines 6-7; page 5, lines 22-25) comprising a circuit (such as exemplary motor control circuitry 232 in FIGS. 2 and 3; exemplary current control circuit 300 of FIG. 3; page 6, lines 4-9) that monitors (such as by step 504, FIG. 5; page 8, lines 16-17; page 9, line 28 to page 10, line 1; page 10, lines 15-17) a cumulative amount of charge (such as step 506, FIG. 5; page 8, lines 18-19; page 10, lines 23-25; page

11, lines 20-21) associated with a power supply (such as exemplary power supply 302 in FIG. 3; page 11, lines 3-7; page 6, lines 9-13 [amended paragraph]), wherein power is removed (such as by step 510, FIG. 5; spindle motor drivers 320, FIG. 3; page 11, lines 7-10 and lines 15-17) from a load (such as exemplary spindle motor 206, 304 in FIGS. 2-3; page 9, lines 1-8) when the cumulative amount of charge is at least equal (such as by step 508, FIG. 5; exemplary voltage comparator 218 and DAC 310, FIG. 3; page 8, lines 26-28) to a predetermined value (such as exemplary reference voltage Vref, step 508 of FIG. 5; page 8, lines 22-25) from a profile (such as exemplary profile 400, FIG. 4; page 7, lines 16-26; page 9, lines 9-12 and 17-20) of said values that decrease in magnitude (such as exemplified by decreasing magnitude of values in profile 400, FIG. 4; page 11, lines 17-19; page 11, line 26 to page 12, line 1) during application of power (such as step 502, FIG. 5; page 11, lines 20-23) to said load.

Independent claim 41 generally features a system (such as exemplary disk drive 100, 200 in FIGS. 1-2; specification, page 4, lines 6-7; page 5, lines 22-25) comprising a motor (such as exemplary spindle motor 206, 304 in FIGS. 2-3; page 9, lines 1-8) coupleable to a power supply (such as exemplary power supply 302 in FIG. 3; page 11, lines 3-7; page 6, lines 9-13 [amended paragraph]); a sensor (such as exemplary sense resistor 306 in FIG. 3; page 6, lines 13-15 [amended paragraph]) coupleable to the motor; and a control circuit (such as exemplary motor control circuitry 232 in FIGS. 2 and 3; exemplary current control circuit 300 of FIG. 3; page 6, lines 4-9) including an input (such as non-numerically designated signal paths across sense resistor 306 that extend to gain multiplier 308 in FIG. 3) and an output (such as non-numerically designated signal path that extends from spindle driver control logic 322 to motor drivers 320 in FIG. 3), the input being coupleable to the sensor

(see FIG. 3), wherein the control circuit provides an output signal (page 7, lines 11-13 [amended paragraph]) on the output responsive to an amount of charge (such as step 506, FIG. 5; page 8, lines 18-19; page 10, lines 23-25; page 11, lines 20-21) provided from the power supply that is at least equal (such as by step 508, FIG. 5; exemplary voltage comparator 218 and DAC 310, FIG. 3; page 8, lines 26-28) to a predetermined threshold (such as exemplary reference voltage Vref, step 508 of FIG. 5; page 8, lines 22-25), the predetermined threshold selected from a profile (such as exemplary profile 400, FIG. 4; page 7, lines 16-26; page 9, lines 9-12 and 17-20) of said thresholds that decrease in magnitude (such as exemplified by decreasing magnitude of values in profile 400, FIG. 4; page 11, lines 17-19; page 11, line 26 to page 12, line 1) during application of power (such as step 502, FIG. 5; page 11, lines 20-23) to said motor.

Independent claim 47 is generally directed to a method (such as routine 500 in FIG. 5) comprising steps of:

monitoring (such as by step 504, FIG. 5; page 8, lines 16-17; page 9, line 28 to page 10, line 1; page 10, lines 15-17) a charge amount (such as step 506, FIG. 5; page 8, lines 18-19; page 10, lines 23-25; page 11, lines 20-21) being removed from a power supply (such as exemplary power supply 302 in FIG. 3; page 11, lines 3-7; page 6, lines 9-13 [amended paragraph]); and

decoupling (such as by step 510, FIG. 5; spindle motor drivers 320, FIG. 3; page 11, lines 7-10 and lines 15-17) the power supply from a load (such as exemplary spindle motor 206, 304 in FIGS. 2-3; page 9, lines 1-8) responsive to the charge amount being at least equal (such as by step 508, FIG. 5; exemplary voltage comparator 218 and DAC 310, FIG. 3; page 8, lines 26-28) to a predetermined level (such as exemplary reference voltage Vref, step 508

of FIG. 5; page 8, lines 22-25) selected from a profile (such as exemplary profile 400, FIG. 4; page 7, lines 16-26; page 9, lines 9-12 and 17-20) of said levels that decrease in magnitude such as exemplified by decreasing magnitude of values in profile 400, FIG. 4; page 11, lines 17-19; page 11, line 26 to page 12, line 1) during application of power (such as step 502, FIG. 5; page 11, lines 20-23) to said load.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds for rejection presented for review on appeal is the final rejection of all pending claims 34-48 and 51-56 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 4,967,291 to Touchton et al. ("Touchton '291") in view of so-called "Prior Art."

VII. ARGUMENT

REJECTION OF CLAIMS 34-48 AND 51-56

Independent claim 34 is a representative claim that generally features an apparatus comprising "*a circuit that monitors a cumulative amount of charge associated with a power supply, wherein power is removed from a load when the cumulative amount of charge is at least equal to a predetermined value from a profile of said values that decrease in magnitude during application of power to said load.*"

The Applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness of the claimed subject matter on the basis that that the cited art fails to teach or suggest all of the claim limitations, as well as on the basis that the skilled artisan would not find it desirable to arrive at the claimed combination from the cited art.

THE EXAMINER'S ASSERTION THAT THE SO-CALLED "PRIOR ART" SUPPLIES THE DEFICIENCIES OF TOUCHTON '291 IS WITHOUT SUPPORT AND THEREFORE INSUFFICIENT TO ESTABLISH *PRIMA FACIE* OBVIOUSNESS

An obviousness rejection requires a showing that all the claim limitations are taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA 1974); MPEP 2143.03. See also *In re Ochiai*, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995) (in an obviousness determination, an Examiner must make *"a searching comparison of the claimed invention, including all its limitations, with the teaching of the prior art."*).

In the present case, the Examiner correctly notes that Touchton '291 does not teach or suggest that "*power is removed from a load when the cumulative amount of charge is at least equal to a predetermined value from a profile of said values that decrease in magnitude during application of power to said load,*" as featured by claim 34. See non-final Office Action mailed April 4, 2008, page 3, lines 9-11.

The Examiner, however, asserts that:

> "*All of the claimed elements were known in the Prior Art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one in ordinary skill in the art at the time of the invention.*" Non-Final Office Action, page 3, lines 11-14 (emphasis added).

This assertion by the Examiner is insufficient to establish a *prima facie* case of obviousness.

The Examiner previously provided a final rejection of the claims as being obvious over Touchton '291 in view of U.S. Patent No. 6,043,631 to Tsenter ("Tsenter '631"). Among other things, Tsenter '631 was generally relied upon to supply a teaching or suggestion for a "*profile of values that decrease in magnitude during application of power to said load,*" as claimed. See final Office Action mailed March 1, 2007, page 3, lines 17-21.

More specifically, the Examiner relied upon a voltage decay waveform between charging pulses shown in FIG. 2 of Tsenter '631 to provide a teaching for the recited profile. This characterization of Tsenter '631 was in error, as discussed by the Applicant in the first Appeal Brief. See first Appeal Brief, pp. 8-10.

By removing Tsenter '631 from the new rejection, the Examiner tacitly agrees that he was mistaken with regard to the actual teachings and suggestions of Tsenter '631. But the deficiencies of the former rejection cannot be ameliorated by making a more general allegation now that the deficient teachings are simply taught in the "Prior Art." It seems the opposite is true, inasmuch as this ubiquitous "Prior Art" referred to by the Examiner fails at least to encompass Touchton '291 or Tsenter '631.

An obviousness determination cannot be made based on mere conclusory statements with regard to the state of "general knowledge" in the art, as the Examiner has done here. As the Federal Circuit recently stated:

> *"Thus when they* [the examiner and the Board] *rely on what they assert to be general knowledge to negate patentability, that knowledge must be articulated and placed on the record. The failure to do is not consistent with either effective administrative procedure or effective judicial review. The board cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies."* *In re Lee*, 61 USPQ2d 1430, 1435 (Fed. Cir. 2002) (emphasis added).

By merely asserting that "*[a]ll of the claimed elements were known in the Prior Art and one skilled in the art could have combined the elements as claimed*," the Examiner has not met that requirement that such general knowledge "*must be articulated and placed on the record.*" *Lee, Supra.*

The term "Prior Art" constitutes a vast and amorphous subject matter that must be defined and constricted by the Examiner. Assertions with regard to the general knowledge

in the art cannot be based on mere conclusory statements, but rather require "*some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness*." *KSR v. Teleflex*, 82 USPQ2d 1385, 1396 (2007), quoting *In re Kahn,* 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *In re Zurko*, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001) ("*deficiencies of the cited references cannot be remedied by the Board's general conclusions about what is 'basic knowledge' or 'common sense.*'"). See also MPEP 2144.03.

While the Examiner has not specifically used the term "official notice," the actions taken by the Examiner constitute such with regard to the assertion that all of the claim limitations are readily taught by the "Prior Art." As the Board will appreciate, such assertions can only be supported if such are "*capable of instant and unquestionable demonstration as to defy dispute*." *In re Ahlert*, 165 USPQ 418 (CCPA 1970); MPEP 2144.03. The irony of the present situation seems lost on the Examiner.

The Board, on the other hand, will surely appreciate that the Examiner's withdrawal of Tsenter '631 from the rejection, combined with the Examiner's inability to supply a supplemental reference to document this general knowledge, runs counter to the requirement that such knowledge be capable of "*instant and unquestionable demonstration*."

Accordingly, the Applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness. *Royka, Supra.* It is inappropriate for the Examiner to step back and make conclusory statements with regard to the presence of all of the claim limitations in the prior art, particularly when his previous attempt to document this showing was in error. Reversal of the rejection of the claims is respectfully solicited on this basis.

THE SKILLED ARTISAN WOULD NOT FIND IT DESIRABLE TO COMBINE/MODIFY THE CITED ART TO ARRIVE AT THE CLAIMED COMBINATION

Assuming *arguendo* that the Examiner may properly assert that the "Prior Art" supplies all of the claimed limitations, which the Applicant respectfully traverses, the Applicant further respectfully submits that the skilled artisan would still fail to find it desirable to arrive at the claimed combination therefrom.

The Supreme Court affirmed in *KSR* that obviousness determinations are to be made in accordance with *Graham v. John Deere*, 383 US 1 (1966). Such analysis includes an evaluation of both the claimed invention as a whole and the teachings of the cited references as a whole with regard to whether the skilled artisan would find it desirable to modify or combine the references to arrive at the claimed combination. *Graham, Supra*; 35 U.S.C. §103(a); MPEP 2141.

When considering the subject matter of claim 34 as a whole (per *Graham*), the skilled artisan would understand that the claim language "*power is removed from a load when the cumulative amount of charge is at least equal to a predetermined value from a profile of said values that decrease in magnitude during application of power to said load*" generally operates to remove power from the recited "*load*" when the recited "*cumulative amount of charge*" is "*at least equal to*" a value from a "*profile of said values*" that "*decrease in magnitude during application of power to said load.*" As discussed in the first Appeal Brief, advantages of this claimed subject matter are discussed in the specification including at page 9, lines 13-23 with regard to the illustrated environment of the exemplary disk drive 100, 200 to provide better load response and power supply characteristics. See first Appeal Brief, p. 12, lines 6-15.

The Applicant has already provided a detailed discussion of the relevant teachings of Touchton '291 as a whole (per *Graham*) in the first Appeal Brief, along with detailed arguments as to why the skilled artisan would not modify the teachings of Touchton '291 as asserted by the Examiner. See p. 12, line 20 to page 14, line 2. Unfortunately, since a rejection of the claims over Touchton '291 has been maintained by the Examiner, it will be necessary to repeat portions of this previous discussion here.

Generally, the skilled artisan would view Touchton '291 as teaching a disk drive 10 with an overvelocity control circuit that limits the maximum velocity that an actuator 12 can safely attain during operation. This limiting of the maximum velocity is intended to prevent damage to the drive 10 in the event of an uncontrolled "run-away" condition in which the drive loses control of the actuator 12 and the actuator slams with great force into an associated limit stop.

Touchton '291 accordingly teaches a "governor" type circuit to limit the maximum velocity of the actuator, with the maximum velocity selected as the highest "safe" velocity in case such impact occurs. See e.g., Touchton '291, FIG. 3; col. 5, lines 54-58; col. 5, line 64 to col. 6, line 5 ("*This constitutes an electronic limitation on the maximum velocity of head actuator 12 by cutting off further acceleration beyond the threshold velocity...*").

The circuitry of FIG. 3 taught by Touchton '291 generally operates as follows. When an integrated VCM current value in Touchton '291 reaches the predetermined threshold, Touchton '291 teaches to turn off transistors Q1-Q4 so that applied current flow through coil 18 is temporarily ceased. See col. 7, line 56 to col. 8, line 4. Furthermore, Latch 86 is provided so that switches Q1-Q4 will remain off even if the integrated value thereafter falls below the velocity threshold until a reinitialization of system 10 is completed. See col. 8,

lines 43-48. See also Touchton '291, col. 8, lines 4-7 ("*Consequently, no further acceleration will be imparted by coil 18 to head actuator 12, and so the velocity of head actuator 12 will never rise above the predetermined threshold velocity.*" See col. 8, lines 4-7, emphasis added).

As noted above, this predetermined threshold velocity is a maximum safe velocity at which the actuator 12 travels during a seek operation. The skilled artisan would understand that higher seek velocities would generally be advantageous in that higher data throughput rates could be attained as less time would be spent waiting to position the head 14 to carry out an I/O operation. See col. 1, lines 22-32. At the same time, the attained velocity must not be so high as to risk damage to the drive 10, should the drive control circuitry not be able to stop the actuator 12 before it crashes into a limit stop. See col. 1, lines 49-54; col. 4, lines 46-53.

As previously pointed out to the Examiner, the skilled artisan would not find it desirable to attempt to modify Touchton '291 to reduce this maximum safe velocity in accordance with a "*profile of said values that decrease in magnitude during application of power to said load*" as claimed. First Appeal Brief, p. 14.

Rather, the teachings of Touchton '291 would suggest to the skilled artisan to select and maintain the highest possible maximum value for the velocity of the actuator. This would provide two benefits that Touchton '291 specifically addresses: first, this value would ensure the safety of the drive 10 in the unlikely event that a run-away condition is experienced, and second, this value would ensure that the drive achieves the fastest seek times and maintains the highest data throughput rates possible.

With regard to the Examiner's proposed modification, the skilled artisan would see NO BENEFIT to successively derate this maximum velocity, by removing charge from the VCM 18 using "*a profile of said values that decrease in magnitude during application of power to said load.*"

By way of illustration, once it is established that some value is the maximum velocity at which no damage occurs in an impact event (say 100 miles per hour, mph), there is no reason to subsequently apply lower maximum velocities (say 90, 80, 70 mph, etc.) to further ensure that no damage occurs. Simply put, if no damage will ever occur at 100 mph, then no damage will ever occur for all speeds below this maximum velocity. No further margin of safety is therefore achieved by using lower values for the maximum velocity below 100 mph.

At the same time, there are very significant performance losses that arise if lower maximum velocities are used. The skilled artisan would immediately understand that if a lower maximum safe velocity is artificially implemented during a seek, it will take longer for the actuator to move the associated head to the destination track and commence a data transfer with the host.

Thus, using the above example, derating the maximum velocity from 100 mph to a lower value, say 90 mph, would NOT reduce the likelihood of damage to the device, but it WOULD reduce the effective data transfer rate of the host. As pointed out previously by the Applicant, the proposed modification would result in a lower data transfer rate with no discernible benefit. It is absurd to conclude that the skilled artisan would find this desirable.

Accordingly, the Applicant maintains that the Examiner has failed to establish a *prima facie* case of obviousness, and instead has engaged in improper hindsight

reconstruction of the claim language. *Graham, Supra.* Reversal of the rejection of the claims is respectfully requested for this reason as well.

THE EXAMINER ERRS IN ASSERTING THAT THE PROPOSED MODIFICATION WOULD "RESULT IN NO CHANGE" IN THE RESPECTIVE FUNCTIONS OF THE CITED ART

Finally, the Applicant will briefly address additional deficiencies of the rejection in this section. The Examiner asserts that the proposed modification of Touchton '291 and the so-called "Prior Art" would result in "*no change*" in the respective functions of the cited art, and the resulting modification would have yielded "*predictable results.*" See Office Action, page 3, lines 12-14 ("*one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions and the combination would have yielded predictable results to one in ordinary skill in the art at the time of the invention.*"). These assertions are respectfully traversed.

As noted above, Touchton '291 teaches to identify a maximum safe velocity at which no damage will occur, and to limit the velocity of the actuator so as to not exceed this maximum safe velocity. The Applicant respectfully submits that it is clear error for the Examiner to assert that the proposed modification to the teachings of Touchton '291 would result in no change in the respective functions of the reference.

Rather, it seems clear that to use a sequence of reduced maximum velocities as proposed would result in significant and undesirable changes to the system taught by Touchton '291, including the reduction of the overall data transfer rate performance of the device without any identifiable decrease in risk of damage or other benefit to the device.

The Examiner has not addressed how a system as taught by Touchton '291 could be readily modified to arrive at the claimed combination, other than merely asserting that it could. The burden is upon the Examiner, not the Applicant, to establish a showing that the skilled artisan would have a reasonable likelihood of success in making such a modification. *Graham, Supra.* Moreover, the query is not whether the skilled artisan "could have" made this modification (as asserted by the Examiner), but rather, whether the skilled artisan would find it desirable to do so. *Graham, Supra.*

With regard to the Examiner's reliance on "predictable results," the Supreme Court gave further guidance in KSR, stating "*a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.*" *KSR* at 1396 (emphasis added). Rather, "*a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions*" and whether such a combination of prior art elements "*does no more than yield predictable results.*" *KSR, Supra* (emphasis added).

The Examiner appears to conclude that so long as the results of the proposed modification are predictable, the modification would be obvious. This too is in error. The actual question presented by *KSR* is whether the combination constitutes something that is more than a mere combination of familiar elements that produces more than mere predictable results. To this the Applicant replies in the affirmative.

First, the "familiarity" of all of the claimed elements to the skilled artisan remains in dispute, as noted above. This is significant since both *KSR* and *Graham* presume that teachings or suggestions for each of the claim limitations have already been properly identified in the art, and the associated analyses set forth in these cases examine the

combinability of these already present and familiar elements. It should go without saying that the inability of the Examiner to demonstrate that the claimed limitations are in fact "familiar elements" weighs against a finding that the claimed combination is a mere combination of familiar elements.

Second, there is no particular reason why the skilled artisan would combine the teachings of Touchton '291 and the so-called "Prior Art" at all. Nothing is gained, and much is lost, in derating the maximum velocity in a governor system as taught by Touchton '291. Indeed, the Examiner has yet to identify any system apart from the present disclosure in which the claimed combination would operate in a routine, desirable or even beneficial manner.

Third, the very fact that Touchton '291, Tsenter '631, and the other art of record are silent with regard to suggesting the claimed combination supports the view that the claimed combination is something "more" than the routine combination of known elements and which provides "more" than mere predictable results. The ability of the Applicant to predict that the Examiner's proposed modification of Touchton '291 would undesirably result in a degraded performance system without corresponding benefit does not somehow meet this "predicted results" criteria and render the combination obvious.

For these reasons, reversal of the newly presented rejection is further respectfully solicited.

Conclusion

In view of the foregoing discussion, it is respectfully submitted that all pending claims 34-48 and 51-56 are patentable over the cited references. The Applicant respectfully prays the Board reconsider and direct passage to allowance of all pending claims.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

Claims 1-33 (canceled).

34. (Previously presented) An apparatus comprising a circuit that monitors a cumulative amount of charge associated with a power supply, wherein power is removed from a load when the cumulative amount of charge is at least equal to a predetermined value from a profile of said values that decrease in magnitude during application of power to said load.

35. (Previously presented) The apparatus of claim 34 wherein the load is a motor.

36. (Previously presented) The apparatus of claim 34 further comprising drivers that are disabled responsive to the cumulative amount of charge being at least equal to the predetermined value.

37. (Previously presented) The apparatus of claim 34 wherein the predetermined value is based on an amount of charge that will cause a spike when the amount of charge is removed from the power supply.

38. (Previously presented) The apparatus of claim 34 wherein the cumulative amount of charge is monitored with an integrative device.

39. (Previously presented) The apparatus of claim 34 wherein the load is an inductive type.

40. (Previously presented) The apparatus of claim 34 wherein the circuit minimizes a spike on the power supply.

41. (Previously presented) A system comprising:

a motor coupleable to a power supply;

a sensor coupleable to the motor; and

a control circuit including an input and an output, the input being coupleable to the sensor, wherein the control circuit provides an output signal on the output responsive to an amount of charge provided from the power supply that is at least equal to a predetermined threshold, the predetermined threshold selected from a profile of said thresholds that decrease in magnitude during application of power to said motor.

42. (Previously presented) The system of claim 41 wherein the control circuit includes an integrator coupled between the input and the output.

43. (Previously presented) The system of claim 41 wherein the control circuit includes a comparator coupled between the input and the output.

44. (Previously presented) The system of claim 43 wherein the comparator is a one-shot type.

45. (Previously presented) The system of claim 41 further comprising motor drivers that are coupleable to the motor and the output, wherein the motor drivers are controlled responsive to the output signal.

46. (Previously presented) The system of claim 45 wherein the motor drivers are disabled responsive to the amount of charge being at least equal to the predetermined threshold.

47. (Previously presented) A method comprising the steps of:

monitoring a charge amount being removed from a power supply; and

decoupling the power supply from a load responsive to the charge amount being at least equal to a predetermined level selected from a profile of said levels that decrease in magnitude during application of power to said load.

48. (Previously presented) The method of claim 47 wherein the load is an inductive type.

Claims 49-50 (canceled).

51. (Previously presented) The method of claim 47 wherein the power supply is decoupled from the load for a predetermined time.

52. (Previously presented) The method of claim 47 wherein the amount of charge being removed from the power supply of the monitoring step is monitored by sensing an amount of current flowing through the load.

53. (Previously presented) The method of claim 52, wherein the monitoring step further comprises accumulating charge in relation to the sensed amount of current flowing through the load.

54. (Previously presented) The apparatus of claim 35, wherein the profile is applied during acceleration of the motor to an operational velocity.

55. (Previously presented) The system of claim 41, wherein the profile is applied during acceleration of the motor to an operational velocity.

56. (Previously presented) The method of claim 47, wherein the load of the decoupling step comprises a motor, and wherein the profile is applied during acceleration of the motor to an operational velocity.

IX. EVIDENCE APPENDIX

No additional evidence is included.

X. RELATED PROCEEDINGS APPENDIX

There exist no relevant related proceedings concerning this Appeal before the Board.